

The Minuteman

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June Extra Edition

Raffle Extended

The period for raffle ticket sales is being extended to Saturday, September 12. The drawing will be held at 2 P.M. just before the closing of our Fall Flea Market.

There are two reasons we are extending the period: First, it turns out that since our Field Day operation is being held on Marlboro city property, there might be some legal ramifications, so we want to avoid that possibility. Second, since our objective is to raise money for test equipment, we want to avoid taking a loss. Ticket sales as of this writing total 1125. Given the rate of ticket returns in the mail and sales at HRO, we won't break even.

So if you have bought tickets, hang on to your stubs...if you still have tickets, try to sell them, or if you can, buy 'em - even if only a few. If we can make this raffle as successful as the first one, we will be half way to being able to afford a second-hand IFR 1200 Service Monitor.

New Controller At '61

During the week of May 10 we experienced a major glitch up at '61. A power supply failure took out the controller and the repeater exciter. Andy, N1BHI and Walter, N1HBR, had been making plans to place the new SCOM 7K Controller at '61 to get better control over a high activity machine and to resolve network problems like phone patch conflicts.

When '61 lost interest in further toil, Walter and Andy were working on computer programs to make programming the controller fast and efficient - entering 100 repeater 'macro' commands on a touchtone

pad takes hours and is error-prone. They had placed the new controller into service up at 449.925 and tested their software just before the '61 failure.

When that happened, it forced a rapid response effort to get the new controller installed; Walter worked all night to build what will become a standard SCOM 7K interface cable and connector set. Then he and Andy worked all day that Saturday to install, interface, and test the controller as well as repair the exciter.

By late Saturday night, the new controller was operating and the repeater back in service.

With the new controller, there are some new user functions that are now available. 449.925 has had direct speed-dial access to the state and local police; '61 now has the same capability.

To access the state police, simply enter '6177*' with touchtones. To get the Marlboro police, use '911*'. The repeater will let you know that it is dialing, and connect you with the police. Use '9110*' to clear the patch when done with the State Police; Use '6178*' to clear the patch when done with the Marlboro PD.

The normal '61 autopatch code automatically takes '61 out of the network, unlinking it from 449.925. The courtesy message is changed from the 'drip' to the voice synthesized word 'Over' - which is played down the telephone line to allow the party being called to know when he can talk. When the normal patch clear code is entered, the courtesy message is restored, and the repeater returns to the network.

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Regular patches go like this: enter the 146.61 patch code with an asterisk after it; the repeater tells you the patch is on and asks you to enter the telephone number. At this point, the courtesy message has been changed to "Over" and the repeater has dropped out of the network. Enter the number you are calling - If you are calling outside Baystate hours (9 am to 12pm) the repeater will not accept a 617 area code, nor will it accept a seven digit number preceded by a 1. Only a seven digit number will be accepted outside Baystate hours. During Baystate hours, acceptable numbers are: 1-617-xxx-xxxx and 1-xxx-xxxx.

After you have entered the number, unkey. The repeater will ask you to hold, dial the number and begin repeating telephone line audio after ringing begins. The patch time limit is 2 minutes. In an emergency, a control operator can override patch timeout. When done with your patch, enter the 146.61 patch clear code. The repeater tells you the patch is off, sets the courtesy message back to normal and returns the repeater to the network.

Other functions are being "fine tuned." For example, '61 now has a new "kerchunk killing" feature that we are experimenting with. If someone kerchunks the repeater more than a pre-set number of times within a pre-set time window, the repeater goes off the air for a short time. Weak signals coming into the repeater can fool this function and cause the repeater to shut down. We are fine tuning the parameters to eliminate shut-downs not caused by kerchunks; bear with us for a few weeks if the repeater does go off the air on you. You will know when it happens; the repeater plays a voice ID when it returns.

'61 also has its own touchtone test; it is the reverse of the 449.925 test to avoid conflicts while the two are linked. To start the test, enter "321*". The repeater will ask you to enter "654", "987" and then "2085" - be sure you add an asterisk after each! If you get the instructions for the next sequence, then your

tones were recognized properly.

1992 Meeting Schedule

September 21 - Budget Meeting

November 9 - To Be Announced

1993 Meetings will be announced in the November Minuteman.

Field Day Update

To date, we have done a lot of planning for our Field Day operation....on Sunday, June 14 we set up and tested the Yagi we will be using, a Cushcraft A4 being provided by Tom, WB1GMA. We mounted it on a 20 foot mast, using Bob's (WA1ZJE) truck - which has in it the 10 KW generator we will be using to supply power.

So far, we have two stations planned, with the possibility of a third. There will be two HF stations, one using the Yagi, and the other using a 160 meter center fed doublet. We'll feed it with open wire, so that we can use it on multiple bands. That antenna will be suspended on one end from the Rocket Ship tank at Slygo, and the other will be in the trees to the west.

The third station may be a VHF operation; several people have indicated an interest in putting that station together.

We still need shelters - anyone who has a large tent that could be loaned to us on the weekend of June 27-28 should contact Andy, N1BHI, or Walter, N1HBR. It would be vastly appreciated - we don't want to have to rent tents.

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Field Day....Continued

We have made arrangements for publicity; through Bob Salow, our operation will be listed along with a number of others in public service announcements on several radio and television stations. Mike is contacting the local newspapers, and has invited all the city officials to visit the operation. We sent letters to the City Council, the Mayor and the Chief of Police.

Mike has also arranged for the most important item of all...a portable chemical toilet that will be delivered to us on Saturday morning. Frank's Chili should keep it busy...

We hope that some of you will stop in during the weekend; we can always use more operators; there will be plenty things to do.

The plan is to have as much fun as is possible...if we score well in the contest, so much the better.

So far, the list of active participants for Field Day includes:

Bob, WA1ZJE
Walter, N1HBR
Tom, WB1GMA
Andrea, WS1C
Mike, N1KRJ
Nick, KC1ZU
Andy, N1BHI
Frank, KB1FZ

We'd like to see a few more names there, so if you would like to get in on the fun, contact Andy, Walter or Mike.

The Monday night nets, which have become a weekly affair, are devoted to Field Day planning, so you can reach any of the people there. The net starts at 7:00 PM.

Flea Market.....

September 12, 1992

Westboro High School

**Doors Open for Sellers:
8:00 AM**

For Buyers: 10:00 AM

Raffle Drawing at 2:00 PM

**\$1000 Credit in an
account at HRO.....**

**Tables: \$10, if paid for by
September 5, \$15 at the
door.**

**Floor Space: \$5.00 if paid
for by September 5, \$8.00
at the door.**

Table Orders to:

**MMRA
P.O. Box 2282
Lexington, MA 02173**

The Minuteman

June Extra Edition

Raffle Ticket Sale Period Extended...See Inside.

Field Day Update

New Controller at 146.61, Marlboro

MMRA
P.O. Box 2282
Lexington, Ma 02173

The Minuteman

Newsletter of the Minuteman Repeater Association - Sept - Oct 1991
Volume 21 Number 1

The President's Corner

This is the beginning of another fiscal year for the MMRA; and once again we are planning some major improvements in our repeater systems. See Tech Stuff for the details..... The Budget reflects the costs of those changes.

What we must focus on as an organization are things that will help us keep the interest of current members and attract new ones....and most of that kind of stuff does NOT cost a lot of money.

This year we would like to put together a training course that aims at entry level people through those wanting to upgrade to general class licenses. We need someone to take on the job of organizing the classes, and people who can teach them. If you have ever said to yourself that you could do a better job of training hams, here's your chance. If you are interested in being involved, let me know, or come to the Board of Directors Meeting in October.

Another event that helps bind a club together is field day; it offers an opportunity for a lot of people to play ham radio and do the things they most like about the hobby, from antenna design to operating. It's also a great social event.... Get in touch if you would like to work on setting up a field day event for 1992.

If anyone has ideas for doing things that can help amateur radio and our organization, come to a board meeting. The MMRA can provide an effective umbrella for any such activities.

The MMRA Flea Market is on tap for September 7. We have the Westboro High School again, and can reasonably expect that a snow storm will not dampen the day. We'll need help out there, so if you can spend some time on Saturday the seventh, come out to Westboro. If you come to help early, you get to see all the good stuff before the rush, and helpers get free food and drink. We need 15 or so people to make it easy on everyone, so come on out! I'll be there at about 7 A.M., helpers should all be there by 7:30.

At the Flea Market you will be able to pick up your copy of the revised MMRA Operating Guide, which has updates covering the use of linked repeaters. If you can't get there on the

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Tech Stuff

By Scott Bullock as told to A. Morrison

This summer turned out to be a productive one; the major projects up at '61 and 449.925 were completed. We have completely refurbished the Sligo Hill site - a fresh coat of paint, roof repairs and a complete replacement of the damaged electrical service were done in July. Many thanks to Tech Committee members Walter Ching, N1HBR, and Frank Caci, KD1AC, for their help. Along with everything else, we spread gravel around the shelter to keep foliage growth down and make the whole place neater and easier to work around. On the Sunday of the same weekend, we moved to the '61 site. Bob, N1CTY, brought his Sunday chain saw, pole saws, hardhat and ear protectors and wrought havoc with the foliage and tree limbs that were shrouding the shelter. Then my bride Denise and Andy, N1BHI, took brushes in hand to paint the shelter while I did the roof with a fresh coat of reflective silver paint. The only thing that marred the day was a running battle with a hoard of wasps that had built a nest in one of the service boxes on the side of the shelter. None of us got stung, thanks to one of those sure-shot cans of hornet spray that has a 20 foot range.

Flea Market - September 7 Westboro High School

Buyers: 8 A.M. Sellers: 10 A.M.

Tables: \$10 prepaid, \$15 at door

Floor Space: \$5 prepaid, \$8 at door

Contact N1BHI, Andy Morrison
508-481-3878

We had a contractor do the replacement of the electrical service at 449.925; Bob used his saws and trimmers to get rid of all the foliage around the service and the rest of the shelter. The electrician did a nice job, replacing the outside service inlet and the fuse box inside the shelter. One of our budget items for that site will add lightening protection - we have been hit three times up there, each time losing one or more power supplies. The other item we have in the budget is a new EPROM with updated firmware for the '925 7K controller.

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Items of Interest..... Continued.

offers to take a role in coordination, and resolving interference problems between amateurs and non-amateur services. The comment period has been extended to close on October 23, 1991. If you have interests in operation on this band, file a comment. Support for the amateur radio community that came from the Department of Defense and National Communications System on the original 220 rule making should continue.

You might be interested to know that the FCC is going to actively pursue unlicensed operations; in addition to land mobile and HF broadcast investigations, the commission will focus on unlicensed operation in the 25 to 28 Mhz band. This spectrum is allocated to government communications, with the exception of the citizens band (26.965 - 27.405). If you listen above or below that band, you will hear what the commission is talking about.

Tech Stuff Continued.....

The major item in the budget is a 7K controller for the Weston Machine. The plan hinges on completion of the programming changes being made by S-COM; these should be ready late in the fall. Since we have three repeaters at that site now (that's right, the 440 machine is now playing on 446.475) the 7K will make operations at that site much easier to manage. The K1BC controller now in service will go up to Stoneham, significantly enhancing controller capabilities there. No major equipment expenditure is budgeted in Stoneham, miscellaneous funds will cover what is needed to interface the K1BC controller.

We also have tubes for the big amplifier budgeted for Weston - our experience with the inexpensive variety of 4CX250B's made in Taiwan was completely unsatisfactory, so we are going back to Eimac.

For 224.70 Weston, we plan a 35 Amp power supply to run an amplifier that KA1AL has donated for service there. That will provide about 6 Db of improvement in signal for that repeater.

If you use 223.94, Hopkinton, you know about the key up delay on its transmitter. We plan to replace the receiver with a Hamtronics; overall performance should

improve, and the pesky key-up delay will be gone. The original receiver uses a Motorola intelligent squelch chip, and its integration into the circuit is undocumented, along with much else about that receiver.

At Quincy we are planning a new link antenna. This will improve the fade margin on the path back to Marlboro and insure full quieting both ways on the link.

For 224.40 Quincy we plan to do some re-wiring of the electrical service, the budget item for this repeater covers the cost of material to do that.

We do not plan any major changes at '61 in Marlboro, so no equipment money is budgeted. We will do some miscellaneous site work, but no major capital items are needed.

No equipment money is budgeted for either the Netrom packet system, 145.03 or for the Weston 440 machine. The 440 machine is a Motorola MSY repeater that is on indefinite loan to the MMRA.

We have reduced the amount set aside for R&D and contingencies to \$500; this is money we really do not expect to spend. One potential area that may use some of this money is the Weston - Arlington remote receiver link. We have been researching signal to noise voters and have found a system that might work. Doug Hall Electronics makes a system that will vote four sources, and could be used to vote incoming signals from the remote receiver AND up the three antennas connected to local receivers. This could allow us to use directive arrays in addition to the Super Stationmaster and Arlington link to expand '82's receive coverage. More research is going into this one.

As for current system problems....the crystal on the '925 transmitter has become temperature unstable; we have ordered a new crystal and an oven. At this site temperature swings are more radical than at any of our sites, and to maintain the integrity of the network, the frequency stability of the main node is critical. The oven and new crystal will solve the problem.

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MIT All Summer Flea Sale -

Third Sunday of Each Month, April thru September.....Albany and Main Streets, Cambridge, Mass. Sellers: \$1.50, 50 cent discount with this notice. Buyers: \$8.00 per space at the gate, \$5.00 pre-paid. Call 617-253-3776 for more info.

Tech Stuff continued

We will be scheduling meetings of the Tech Committee through this year; we hope to get suggestions and help from an even wider group of members. Which brings up a sore subject..... As usual, most of the work that is done to keep this organization "on the air" is being done by a small group. Officers and members of the Board of Directors give of their time to work on various projects.....we need more help from the general membership. If you believe that the MMRA is worthwhile enough to be a member and send dues, give some time and/or expertise as well. All it takes to become involved is to come to meetings - especially Board and Tech Committee meetings. There you will be invited to participate in discussions of our plans, problems and needs. It's the place to come to volunteer your help.

Any member who comes to these meetings and participates is likely to be invited to become directly involved in doing things. A member with an idea to improve the organization can end up chairing a group charged with getting something important done. That kind of involvement is what has made ham radio. You might even find it fun....lots of you have knowledge and talent that you apply everyday at work that could benefit the MMRA. Often doing something you know well for a group like the MMRA is a lot more fun than the daily crank we all do at work.

And it can be just as much fun getting into something completely new. If you are a relatively new ham and want to learn, hanging around with the people who make the MMRA go can be a real learning experience. We deal with just about all the technical aspects of radio communications - from Antennas to Zener diodes. It affords any member who digs into it a rare opportunity to expand his knowledge and take a more personally satisfying place in the ham radio community.

You might even find that you get to know some interesting people a lot better. If you have any questions about all this, get in touch with any club officer, trustee or member of the Board of Directors.

So GET INVOLVED....come and work with us.

In Memoriam.....Bob Ling, W1IBF

This summer, Bob Ling became a Silent Key. Bob was a "plank owner" in the MMRA...his member number of 633 speaks for itself. He gave of his time and energy to the organization for a lot years. When I first came into the area and got involved with the MMRA he was one of the first guys I met in person. I was setting up an HF station in Sudbury, and needed to make some small fitting for an antenna installation. I happened to mention what I was doing in a conversation with Bob, and he allowed as how he "might be able to come up with something that would work." What an understatement.....I went up to his place on Goodman Hill, and went into his cellar machine shop. We talked a bit about what I needed....as I left he said he would give me a call in a day or so.

It was only one day....he called me on the phone, inviting me to come and take a look at what he had done. Well, what he gave me looked like it had been manufactured by a professional machinist, with the utmost care for quality.....and that sums up Bob Ling in a nutshell.

Always willing to help a fellow ham, full of the lore of the old days, Bob typified the best in ham radio. As a control operator for 146.82, he and Frank, W1JDO, made sure that few went unaided when they needed help. Well into his 80's, before his wife became seriously ill, Bob was at every MMRA function and constantly going down to the '82 repeater room to do something the system needed.

We are going to miss Bob. The MMRA and the local ham community are diminished by his loss.

by A. Morrison, N1BHI

Meeting Program - Monday September 9, 1991

**Jack "Curt" Curtis, K2TJZ will
give a talk on medical preparations
and activites during Operation
Desert Storm.**

**Presentation of 1991 Budget
Raffle Drawing**

Weston site tour - 7:00 P.M.

Meeting Starts - 7:30 P.M.

The Minuteman

Newsletter of the Minuteman Repeater Association - Sept - Oct 1991

Volume 21 Number 1

Repeater Information

Weston	146.82	KA1AL/R	PTL	P	
Marlboro	146.61	N1BHI/R	FTL	P	
Marlboro	449.925	KA1CLX/R	FTL	P	
Stoneham	146.715	N1DKZ/R	PTL	P	(link not yet on)
Quincy	146.67	KC1VW/R	PTL	P	(link not yet on)
Quincy	224.40	KA1CLX/R	FTL		
Weston	224.70	KA1AL/R	FTL		(patch via link)
Hopkinton	223.94	N1BHI/R	FTL		(patch via link)
Weston	444.475	KA1CLX/R	FTL		(guest rpttr)

FTL = Full Time Linked PTL = Part Time Linked P = Patch

Officers and Board of Directors

President:	Andy Morrison, N1BHI	508-481-3878
Vice President:	Walter Ching, N1HBR	508-481-0994
Secretary:	Frank Morrison, KB1FZ	508-443-6047
Treasurer:	Ian MacLennan, AF1R	
Clerk:	Al Williams, KA6BUV	
Directors:	Barry Brozenske (K3BUZ), Al Kunian (KA1AL), Scott Bullock (KA1CLX)	
Tech Director:	Scott Bullock (KA1CLX)	617-926-8650
Newsletter Editor:	A. Morrison (N1BHI)	

Meetings:

Membership : Second Monday of ODD numbered months, Campion Center, Weston
(September through May)

Board: Second Monday of EVEN numbered months. Meetings are open,
members welcome. If a visiting member wants to be on the
agenda, please contact Andy Morrison beforehand.

The MMRA is dedicated to Amateur Radio in the public service. The MMRA is a registered, non-profit
Massachusetts Corporation. Membership is open to all amateurs, Annual Dues are \$25, family \$35.

Mail/Return Address:

MMRA, P.O. Box 2282
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